

ABSTRACT

HYDROPHILIC CYANINE DYES

Cyanine dye bioconjugates useful for diagnostic imaging and therapy are disclosed. The conjugates include several cyanine dyes with a variety of bis- and tetrakis (carboxylic acid) homologues. The compounds may be conjugated to bioactive peptides, carbohydrates, hormones, drugs, or other bioactive agents. The small size of the compounds allows more favorable delivery to tumor cells as compared to larger molecular weight imaging agents. The various dyes are useful over the range of 350-1300 nm, the exact range being dependent upon the particular dye. Use of dimethylsulfoxide helps to maintain the fluorescence of the compounds. The inventive compounds are useful for diagnostic imaging and therapy, in endoscopic applications for the detection of tumors and other abnormalities, for localized therapy, for photoacoustic tumor imaging, detection and therapy, and for sonofluorescence tumor imaging, detection and therapy.